LONG ISLAND BOTANICAL SOCIETY NEWSLETTER

Vol. 7, No. 1 Jan. - Feb. 1997

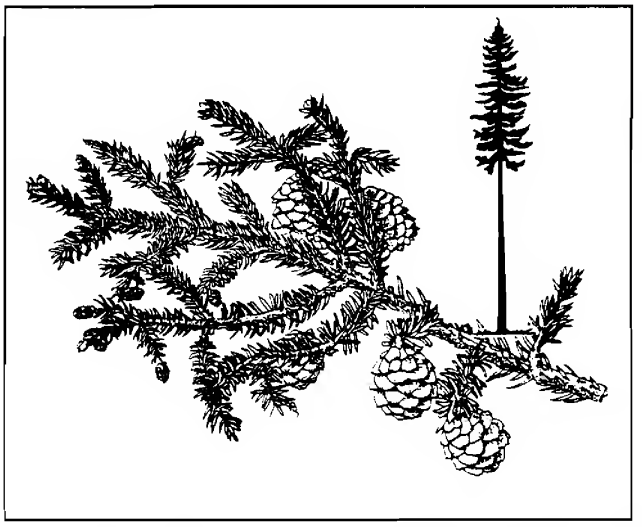
Ex Ligno, Mundus

[From Wood, a World]

It is 12,000 years ago — the late Pleistocene. The Laurentide Ice Sheet is rapidly wasting away and has already retreated to what is now southern Canada. As the ice sheet wanes, seawater long locked up in the continental glacier is returning to the ocean, which is gradually flooding back over the lands of the Continental Shelf exposed at the height of the Ice Age. When the ice began to retreat, the climate moderated, and life began its recolonization of the newly resurrected landscape.

On Long Island, the maximum advance of the glaciers is marked by the low line of hills we now call the Ronkonkoma Terminal Moraine. On this long-ago day, the hills of the moraine are all intact, and loop out into what is now the Atlantic, across to a high spot that is the future Block Island, and on into Massachusetts. The slowly rising ocean is still a hundred kilometers from today's South Fork. Behind the terminal moraine are recessional moraines, less emphatic than the Ronkonkoma Moraine, but the land is undulating and hummocked, with scattered depressions, old kettle holes, and former meltwater channels. Many fill with water.

The gravels, sands and clays left by the ice were swiftly revegetated, first by tundra species, and then by taiga species. At the edge of a little clear pond, not far from the present Montauk Village, sunlight glints off the chilly water. A forest of small and unthrifty spruce clothes the gentle slopes around this pond and others nearby. Although the landscape is now wooded, it is a time of renewed climatic stress. The Younger Dryas event, a setback in the warming process, has recently begun about a thousand years of cooler temperatures throughout the Northern Hemisphere. One of the stressed spruce at the edge of the pond dies. The day comes when it falls into the pond, and soon waterlogs and sinks. the millennia pass and the pond continues to collect windblown and water-borne sediment from the surrounding area. The pond becomes shallow. In the last couple of thousand years biological succession rapidly turns the shrinking pond to a bog and there is a final conversion into a Phragmites marsh. The taiga is long vanished, replaced by our modern forests. The buried spruce slumbers under two meters of layered sediment.



A 12,200 year old piece of spruce (*Picea*) was recently discovered near Montauk (Illustration from Cope, 1992)

Highlights

Pleistocene Spruce: continued from p. 1

The Atlantic continued its rise and obliterated much of the Ronkonkoma Moraine east of Amagansett, the Montauk Peninsula of today being the higher parts of the recessional moraine behind the now-vanished terminal moraine. In the Ditch Plains area, just east of Montauk Village, the advancing and relentless ocean has eroded the recessional moraine and other Pleistocene sediments into nearly vertical bluffs, tens of meters high in places. The ancient pond, once far from the Atlantic, has now been cleft by the knife of its waves, rent vertically from the ancient bottom to the surface. Slowly the shore retreats, bluffs crumble, and the millennia slip away, washed to oblivion in the surf. A block topples from the bluff face and for the first time in twelve thousand years a small piece of spruce shines wetly in the sun.

The two authors of this note were fortunate enough to see much of the evidence for this narrative, a narrative not entirely speculative. We found, in January of 1995, approximately 1 km east of Ditch Plains, a 3.5 meter-high bluff face where erosion had exposed the peat, clay and other sediments that are clearly those of an old pond. We provide a drawing of the exposure and a schematic of the sediments in the accompanying figure.

We collected two samples of wood (not the pictured specimens) from this exposure and had them radiocarbon dated by Geochron Laboratories of Massachusetts. One sample, collected approximately one meter below the surface in the peaty-deposit, is 1,635 radiocarbon years old. The second, from a slumped block two meters or more down, is 12,210 radiocarbon years old. The U. S. Forest Service's Center for Wood Anatomy Research has identified the older of these wood specimens, and it is spruce. A spruce ID for the older sample is no surprise, since pollen data indicate the spruce period on Long Island persisted until about 9,000 years B.P.

In November of 1996 we returned to the exposure and found additional wood specimens in place, as we show in the schematic of the exposure. We have sent the specimen on the right of the schematic for radiocarbon dating, and have kept the other specimen for further study. The radiocarbon date of the new wood exposure will, we hope, confirm the 12,000 year date of the older previous sample, and thus precisely date this depth of the exposure. The other wood specimen, collected at the same depositional level, is a root crown and a bit of the bole from a small tree that retains some bark. The bark clearly appears, to one of the authors (RW), to be spruce.

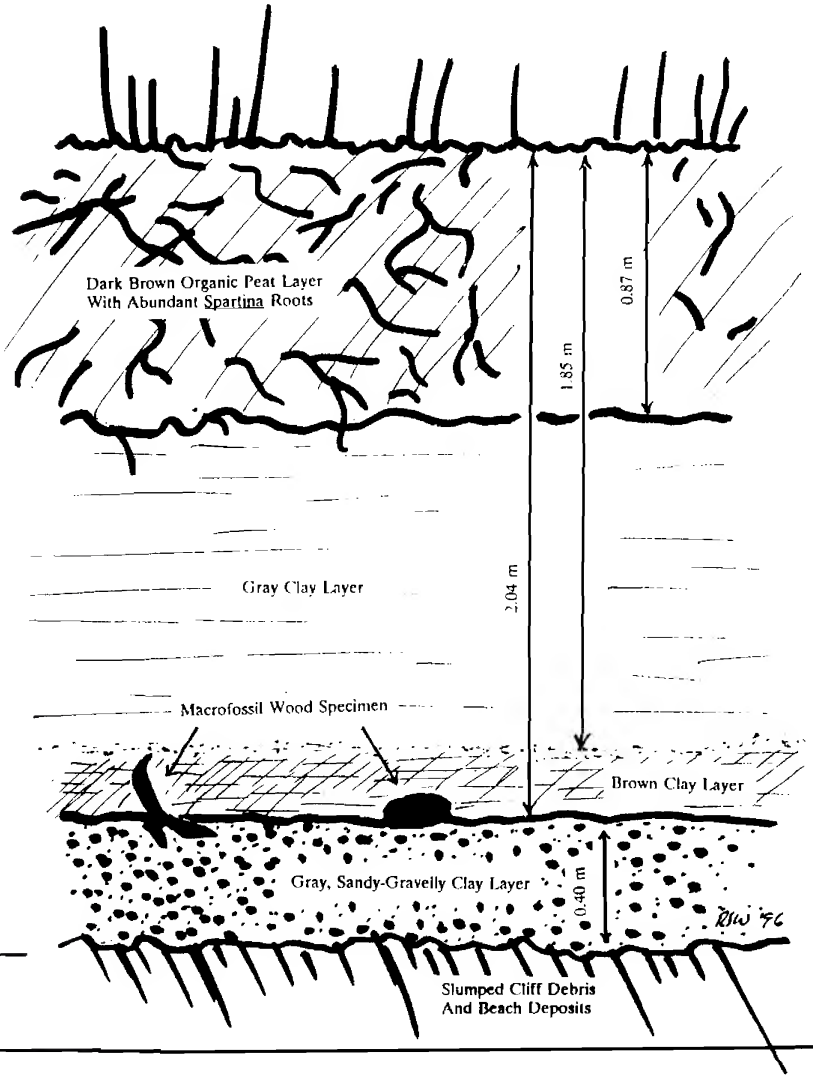
The geologic and biologic history of the Montauk Area (and for much of Long Island) from the waning of the Pleistocene through the Holocene is still full of uncertainties. The complexities of the phenomena and the contingencies of unknowable and irretrievable events offer investigators fertile ground for conflicting scenarios. We will never know the full details of the patterns and processes that yielded our current landscape, but our Montauk site provides a glimpse of the richness of the evidence that remains for us to work with.

Ray Welch: Department of Biology,
Suffolk Co. Community College
John Black: N.Y.S. Summer Institute for
Science & Math,
Suffolk Co. Community College

(The New York State Summer Institute for Science and Math, Suffolk County Community College, provided the funding for the radiocarbon dating of the wood specimens.)

Much of today's boreal forest region is a land of low relief, with many lakes and slow streams and extensive boggy areas. The bogs are often covered with sphagnum moss and are then called muskegs (above). The trees of the boreal forest are small, seldom over 50 feet tall or with a trunk over 2 feet thick.

Erosionally Exposed,
Late Pleistocene-to-Holocene Lacustrine Deposits in
A Recessional Moraine at Ditch Plains,
Montauk, New York.



Book Review:
The Dying of the Trees

My dad and I recently paid a visit to the local bookstore. As usual, I walked over to their voluminous magazine section. On this day, I picked out a quarterly called *Earth Island Journal* which gives worldwide environmental news. I scanned the table of contents and stopped at the title *The Dying of the Trees*. The subtitle was *The Pandemic in America's Forests*, and it was written by Charles E. Little.

I have been reading articles about the environment for many years, but this title was one of the most alarming ones I could remember. I knew the word "pandemic" referred to an epidemic. Later, I checked a dictionary to learn that "pandemic" meant occurring over a wide geographic area. If there was an epidemic afflicting America's trees, I had not heard about it.

As a child, I learned that certain tree species are vulnerable to diseases such as Dutch elm and American chestnut blight. Deadly fungi have decimated these species in our forests and neighborhoods. And along with thousands of beachgoers and commuters, I've witnessed a large die-off of Japanese pines along Ocean Parkway.

With these images in mind, I read the excerpt from Mr. Little's new book. I found the piece to be so alarming that I went straight to the store's nature section to look for it. My luck held. I sat down in the reading area and read through the first two chapters. The first dealt with the die-off of the lovely dogwood tree by a type of fungus never described before which has inexplicably laid waste trees on both of our coasts simultaneously. The velocity with which this fungus spread has been faster than any other known blight. A plant pathologist for the U.S. Forest Service, Robert Anderson, has found that when dogwoods are subjected to simulated acid rain in a controlled greenhouse situation, the rate and severity of the fungus infection is greatly increased. The next chapter described research done at Camel's Hump, a peak high up in the Green Mountains of Vermont. The forest there, Charles Little was told, is as pristine as can be found in the state of Vermont, yet red spruce are dying in unheard of numbers, and birches and maples are in decline. The researchers do not know what is causing it, but Hubert Vogelman, a botanist with the University of Vermont who has done long term studies of these tree species, believes that air pollution over the years has robbed the forest soils of essential nutrients which protect the trees.

Charles Little, a journalist with thirty years of environmental writing to his credit, has written what is very likely the most powerful and profound book about the American environment since Rachel Carson's *Silent Spring*.

Throughout the country, trees are dying at a rate that cannot be explained by the natural ebb and flow of forest ecosystems. In addition, those who study soils speak of dramatic declines in earthworms. The soils are receiving such heavy doses of industrial pollutants by way of acid rain that they are developing mineral deficiencies. These deficiencies create a complex set of actions which throw the whole natural system out of balance.

Mr. Little also writes about citizen groups who replant thousands of trees and scientists who are trying to find ways to save the trees from a range of man-induced causes like acid rain, increased ultraviolet radiation, and breakdown of the ozone layer. He states that all these efforts are important, but the reason he wrote the book was to convince Americans that "the system is sick and we cannot cure the underlying illness by giving first aid here and there."

The Dying of the Trees is the most distressing book I have ever read. I implore you to read it. Charles Little and many of the people in his book are courageous truthtellers who should be applauded. We should open our eyes and take action. After reading the book, you'll understand that the world we live in depends on it.

Carl Starace, West Islip

Treasurer's Report - 1996

Opening Balance (1 Jan. 1996)	6,003.08
Income Total	2,467.76
Expenses Total	1,891.24
Net Gain	576.52
Closing balance (26 Nov. 1996)	$6,579.60

Respectfully submitted: **Carol Johnston**
Treasurer

Plant Sightings

[Editor's note: the following reports are from Aug. to Oct., 1996; due to space limitations they were not included in the last issue of the newsletter.]

A new weedy plant may be establishing itself on the South Fork. During the past few years **Eric Lamont** has made several collections of *Verbena bonariensis* (Purple Top Vervain) from the Township of Southampton. This showy vervain, native to the New World pantropics, has recently become a big seller at local nursery centers.

Jim Ash located a dwarf species of *Aster* on the blufftops at Shadmoor, near Montauk; the prostrate, wind swept plants overlooking the Atlantic were only 3 inches tall, and were blossoming profusely. The plants were keyed out in Gray's Manual of Botany (Fernald, 1950) as *Aster ericoides* forma *prostratus*; Fernald appropriately commented: "of very bleak habitats."

Barbara Conolly and **Betty Lotowycz** located a naturalized population of *Geranium sibiricum* along a path in Coffin Woods, Locust Valley. The population is well-established and is spontaneously reproducing; apparently, this is the first report for this species from Long Island.

Kudzu continues to invade L.I.

As I was bicycling home from work a couple of days ago, the strong scent of grapes wafted into my nostrils. However, I made an immediate turn around because the scent triggered a different idea than grapes - from my Georgia days I knew it was Kudzu.

Sure enough, as shown on the enclosed map, there is a robust stand of *Pueraria lobata* along Peabody Road in Huntington. I called Skip Blanchard and he said he knew of two other locations for the plant on Long Island, but not this one.

So, in case folks have not seen this scourge of the south and would like to see it here on Long Island, here's one place and it was in full flower.

Bruce Lund, The Nature Conservancy

Society News

Due to a severe flare up of diverticulitis (an intestinal disorder) **Otto Heck** was unable to present his November talk on ferns of the northeast. More than 60 members of LIBS and TNC were present, many were former students who had experienced Otto's Long Island ecology course which he taught for 25 years. As a last minute replacement, **Eric Lamont** spoke on "100 years of change in the orchid flora of Long Island," using slides of the award winning orchid photographs of LIBS members **Dorothy Cherbavaz** and **Morano Tagliapietra**.

At the December meeting, **John Potente** presented a comprehensive overview of the natural history of the American Chestnut (*Castanea dentata*) and other menbers of the genus *Castanea*. John's depth of knowledge of the chestnut blight was evident to all, and 1 1/2 hours was not enough time to present his entire program. Therefore, Part 2 of "The Blight and Plight of the American Chestnut" will be featured during a spring meeting.

Mike Bottini has announced that a new hiking trail has been cleared and blazed through the Camp Hero forest at Montauk. A map of the "Camp Hero Section of Paumanok Path" is available upon request from Mike Bottini, Group for the South Fork, P.O. Box 569, Bridgehampton, N.Y. 11932, or call Mike at 516/537-1400. **John Turner** hiked the Camp Hero Trail in late summer and observed 8 separate subpopulations (100's of individuals) of Nodding Ladies-tresses orchid (*Spiranthes cernua*) and very large specimens of American Basswood (*Tilia*).

Bob Laskowski reported that the population of Yellow Milkwort (*Polygala lutea*) that had been bulldozed last year made a miraculous recovery this past August and has actually increased in numbers of individuals. Only three populations of this rare plant currently occur in New York.

New Members

The Long Island Botanical Society is pleased to welcome the following new members:

John Black, Patchogue; **Dr. Russell Burke**, Hofstra University; **Cheryl Heyman**, Forest Hills; **John & Joyce Holzapfel**, Orient; **JR Jacobson**, NYS DEC Stony Brook; **Fred & Ann Meier**, Little Neck; **Debbie & Scott Oggeri**, South Huntington; **Prospect Park Alliance**, Brooklyn; **Barbara Zotz**, Huntington Station.

LONG ISLAND BOTANICAL SOCIETY
Founded: 1986; Incorporated: 1989.

The Long Island Botanical Society is dedicated to the promotion of field botany and a greater understanding of the plants that grow wild on Long Island, New York.

President	Eric Lamont
Vice President	Skip Blanchard
Treasurer	Carol Johnston
Rec'rd Sec'y	Barbara Conolly
Cor'sp Sec'y	Jane Blanchard
Local Flora	Steven Clemants
Field Trip	Glenn Richard
	Allan Lindberg
Membership	Lois Lindberg
Conservation	John Turner
	Louise Harrison
Education	Mary Laura Lamont
	Thomas Allen Stock
Hospitality	Betty Lotowycz
Program	Skip Blanchard
	Steven Clemants
Editor	Eric Lamont

Membership

Membership is open to all, and we welcome new members. Annual dues are $10. For membership, make your check payable to LONG ISLAND BOTANICAL SOCIETY and mail to: Lois Lindberg, Membership Chairperson, 45 Sandy Hill Road, Oyster Bay, NY 11771-3111

PROGRAMS

14 January 1997 - 7:30 pm*
Member's Night, Muttontown Preserve Nature Center, East Norwich; show some of your favorite botany-related slides. Call **Steve Clemants** at 718-941-4044 x234 if you plan to bring slides.

11 February 1997 - 7:30 pm*
Dr. Bryan Dutton, Research Taxonomist, Brooklyn Botanic Garden,
"An Introduction to The Flora of China"
Muttontown Preserve Nature Center, East Norwich.

*Refreshments & informal talk begin at 7:30pm, the meeting starts at 8pm. For directions to Muttontown Preserve please call 516-571-8500.

LONG ISLAND BOTANICAL SOCIETY
c/o Muttontown Preserve
Muttontown Lane
East Norwich, New York 11732